

MonH-159

Copy 11A

Contract No. W-35-058 eng 71

HEALTH DIVISION

REPORT FOR MONTH ENDING AUGUST 31, 1946

J. E. Wirth, M. D.

~~This document contains information~~
~~the disclosure of which is prohibited by law~~
~~and the unauthorized disclosure of which~~
~~may result in the punishment of the~~
~~person is prohibited by law.~~

DECLASSIFIED Per Letter Instructions Of
 AEC 4-6-53

ms for N.T. Bray
 5/29/53 SUPERVISOR CENTRAL FILES
 ORNL

This document has been approved for release
 to the public by

David R. Hamlin 3/4/96
 Technical Information Officer Date
 ORNL Site

August 31, 1946

MonH-159

CLINTON LABORATORIES

HEALTH-PHYSICS SECTION OF HEALTH DIVISION

by

K. Z. Morgan - - - Section Chief

Recovery from the Bikini expedition is nearly complete. Six of the group from this section have found their separate ways back to Oak Ridge, and the seventh is reported enroute. Reports from these persons reflect general satisfaction with their experiences in participation in the underwater bomb test, and indicate that their participation was profitable both to this section and to the Navy.

In the event of failure to prevent another war, it is evident that problems of radioactive contamination may well tax any facilities designed to meet them.

Research and Development: J. H. Roberson, H. H. Abee, and P. W. Reinhardt have made a study of the transmission of neutrons, from a Po-Be source, through water and paraffin as a basis for design of shipping containers. Water was used for much of the experimental work for convenience and as a fairly good simulation of paraffin. They conclude that 6 inches of a mixture of paraffin and borax (25 parts paraffin to one of borax) will transmit 10% of the neutrons from Po-Be. Beyond this thickness, two inches of paraffin-borax reduces the number of neutrons transmitted by one half.

Difficulty experienced by these experimenters in achieving uniform mixtures of paraffin and borax indicate that the necessity for care in this phase of shield construction cannot be over-emphasized. From this point of view, a solution of borax in water has a distinct advantage as a shielding material.

Area Survey: The thirteenth barium production run started August 13th and was completed August 20th. During this operation 38 precipitron runs indicated air contamination above 10% of tolerance, requiring temporary evacuation or use of assault masks. It is thought that the 706-D stack may be the principal source of activity; since most of the activity occurred when the wind was from the north, and the highest activity coincided with high activity at the entrance to the restricted area. Thyroid counts above background were recorded for 23 persons; and counts of 1162 and 831 on successive days were recorded for one person.

Surveys of the cafeteria and canteen disclose beta and gamma contamination on a screen door. Investigation showed contamination on all screens, particularly those on the east and north sides. Contamination on a one